

NON-PUBLIC?: N  
ACCESSION #: 8911200058  
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Nine Mile Point Unit 2 PAGE: 1 OF 5

DOCKET NUMBER: 05000410

TITLE: Engineered Safety Feature Initiation Due to Personnel Error  
EVENT DATE: 10/13/89 LER #: 89-035-00 REPORT DATE: 11/13/89

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 054

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR  
SECTION:  
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:  
NAME: Joseph C. Kirkpatrick, Assistant TELEPHONE: (315) 349-7297  
Generation Specialist, Maintenance  
Support

COMPONENT FAILURE DESCRIPTION:  
CAUSE: X SYSTEM: AD COMPONENT: MG MANUFACTURER: G080  
REPORTABLE NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: NO

#### ABSTRACT:

On October 13, 1989, at 0949 hours Nine Mile Point Unit 2 (NMP2) experienced an actuation of an Engineered Safety Feature (ESF), specifically an automatic Reactor scram as a result of a main turbine trip. At the time of the event, the reactor was operating at 54% rated power with the mode switch in "RUN" (Operational Condition 1).

The root cause was determined to be personnel error in that an adequate evaluation of plant impact was not performed. A contributing cause was failure of administrative procedures to address a comprehensive plant impact review.

Control Room operators carried out immediate corrective actions. Other corrective actions include revision of plant impact evaluation form and repair of motor generator logic circuit. The responsible Chief Shift

Operator (CSO) was directed to write a Special Report concerning this event. Meetings were held to stress the importance of plant impact evaluations. Administrative procedures will be revised. A Lessons Learned transmittal will be issued.

END OF ABSTRACT

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## I. DESCRIPTION OF EVENT

At approximately 0945 hours on October 13, 1989, Nine Mile Point Unit 2 began to experience a loss of condenser vacuum. At the time of this event, the Reactor mode switch was in the "RUN" position and Reactor power was at 100%.

Immediately prior to the event, Electrical Maintenance personnel were performing scheduled preventive maintenance on "B" condenser air removal pump (2ARC-P1B) per procedure N2-EPM-GEN-R551 (600 Volt ITE Breaker/Motor and Breaker Load Test). A step in this procedure required the electrical circuit breaker for this pump to be cycled. Although the breaker was in the "test" position, the associated interlock circuits remained energized. When the breaker was cycled, an associated interlock caused the steam air ejector isolation valve (2ARC-AOV104) to close.

The Control Room operators noticed the decreasing main condenser vacuum at 0945 and began to reduce power at this time utilizing control rods and recirculation flow. At 0949, with Reactor power reduced to approximately 54%, a turbine trip and subsequent Reactor scram occurred due to low condenser vacuum.

Following the Reactor scram, the Emergency Operating Procedures were entered due to low Reactor water level. The lowest level recording during the event was 145.0 inches. Reactor water level was restored by 0950 hours utilizing the feedwater system. At this time, Emergency operating Procedures were exited and the operators proceeded to return the plant to a stable shutdown condition.

The following discrepancies occurred during this transient:

1. Recirculation pump (2RCS\*P1A) tripped to off position instead of downshifting to low speed following the scram. This was due to a blown fuse caused by a faulty diode in the low frequency motor generator (2RCS-MG1A) logic circuit.

2. A Redundant Reactivity Control System (RRCS) Division I trouble alarm was received at 0950. Subsequent investigation determined the same fault as described in item 1 caused this alarm.

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3. Turbine bypass valve (PSV89C) position was not recorded as opening on the alarm typer. However, the valve position recorder indicated proper valve movement. The alarm typer is being investigated to determine the cause of this discrepancy.

## II. CAUSE OF EVENT

A root cause analysis was performed per Site Supervisory Procedure S-SUP-1, "Root Cause Evaluation Program". This analysis utilizes the Human Performance Evaluation System (HPES), published by the Institute of Nuclear Power operations (INPO).

The root cause for the Reactor scram is personnel error because of inadequate plant impact assessment. Operations, Maintenance and Planning personnel failed to ensure a full understanding of the plant impact prior to issuing the markup and signing off on the procedure. A contributing cause was the existing Administrative Procedures failed to adequately address the requirements and responsibilities for performance of plant impact review.

## III. ANALYSIS OF EVENT

This event is reportable under 10CFR50.73 (a) (2) (iv), "Any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS). However, actuation of an ESF, including the RPS, that resulted from and was part of the pre-planned sequence during testing or reactor operation need not be reported".

There were no adverse safety consequences as a result of this event. The turbine trip system and Reactor Protection System functioned as designed. A low vacuum in the condenser trips the turbine to protect against high turbine exhaust pressure. The turbine control valves and stop valves fast close on a turbine trip signal resulting in a Reactor scram via the Reactor Protection System (RPS) when the Reactor power is above 30%.

Loss of the "A" recirculation pump during this event did not result in any adverse safety conditions. The operators maintained required

core flow and controlled the safe shutdown of the Reactor with one recirculation pump.

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The duration of this event was approximately 12 minutes, starting with the low condenser vacuum alarms at 0944 hours and ending when the RPS Reactor scram alarms were cleared at 0956 hours.

This transient was significantly less severe than the loss of condenser vacuum accident analyzed in the Updated Safety Analysis Report (USAR).

#### IV. CORRECTIVE ACTION

Immediate corrective actions were taken in accordance with appropriate procedures to respond to the turbine trip and Reactor scram.

Other actions taken include:

1. A meeting was held with the Electrical Maintenance personnel and they were reprimanded for failing to properly identify the plant impact of the maintenance they were performing. The importance of adequate plant impact evaluations was stressed at Electrical Department meetings.
2. The responsible CSO was temporarily assigned administrative duties to write a Special Report to clarify responsibilities and good practices for Control Room operators.
3. The Station Superintendent and the Superintendent of Operations held a meeting with the Station Shift Supervisor (SSS), Assistant Station Shift Supervisor (ASSS) and Chief Shift Operator (CSO) to discuss this event.
4. A plant impact review form has been initiated per Station Superintendent directive and includes an Operations review and approval of the plant impact. This form must be completed prior to the performance of plant maintenance (Work Requests, Preventive Maintenance, and Loop Calibrations) and requires approval by the Chief Shift Operator (CSO) and Station Shift Supervisor (SSS). The plant impact review form will be included in Administrative Procedures which will outline the review process and department responsibilities.

5. Work Requests (W17019 and W170192) were issued and repairs were made to the "A" motor generator logic circuit.

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6. A Lessons Learned Transmittal will be issued to inform all applicable departments of the importance of plant impact assessment.

## V. ADDITIONAL INFORMATION

### A. Failed component identification:

Motor Generator Component Number 2RCS-MG1A  
Manufacturer General Electric  
Type ATI-4 Pole-300 KVA-  
3 Phase-15 HZ-1250V

B. Previous similar events--there are previous similar events related to inadequate plant impact assessment. These events are detailed in LER 87-17, 87-26, 87-64, 88-06, 88-17 and 88- 51.

The corrective actions associated with similar events would have prevented this event had the personnel involved in this event reviewed all the applicable Engineering drawings to determine plant impact.

### C. Identification of components referred to in this LER:

COMPONENT IEEE 803 FUNCTION IEEE 805 SYSTEM ID

Main Condenser CDU SG  
Steam Air Ejector  
Isolation Valve ISV SM  
Low Frequency Motor  
Generator MG AD  
Recirculation Pump P AD  
Turbine Bypass Valve V TA  
Condenser air removal pump P SM  
Redundant Activity Control  
System N/A JD  
Feedwater System N/A SJ

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NIAGARA

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NINE MILE POINT NUCLEAR STATION/ P.O. BOX 32, LYCOMING, N.Y.  
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NMP59036

November 13, 1989

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

RE: Docket No. 50-410  
LER 89-35

Gentlemen:

In accordance with 10CFR50.73, we hereby submit the following Licensee  
Event Report.

LER 89-35 Which is being submitted in accordance with 10CFR50.73 (a) (2)  
(iv), "Any event or condition that resulted in manual or  
automatic actuation of any Engineered Safety Feature (ESF),  
including the Reactor Protection System (RPS). However,  
actuation of an ESF, including the RPS, that resulted from and  
was part of the pre-planned sequence during testing or reactor  
operation need not be reported".

The 10CFR50.72 report was made at 1127 hours on October 13, 1989.

This report was completed in the format designated in NUREG-1022,  
Supplement 2, dated September 1985.

Very truly yours,

J. L. Willis  
General Superintendent  
Nuclear Generation

JLW/AC/lmc

ATTACHMENT

xc: William T. Russell, Regional Administrator  
William A. Cook, Sr. Resident Inspector

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